BRUHAT BANGALORE MAHANAGARA PALIKE

Name of the Agency : **Technical Manager,** KRIDL, Bangalore.

Name of the Work : Improvements of Roads and Drains in UAS 1st cross to 4th cross in Jakkur Ward No.07 of Byatarayanapura Kodigehalli Sub Division, BBMP, Bangalore.

Estimate Cost :

QUALITY CONTROL REPORTS TO

ASST. EXECUTIVE ENGINEER
Kodigehalli Sub Division,
BBMP, Bangalore.

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QUALITY CONTROL REPORTS FOR

WET MIX MACADAM (WMM)

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Job No.: CTCE/BBMP/W.No.07/KRIDL/WMM/Gradation/2014-15

10.07.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Improvements of Roads and Drains in UAS 1st cross to 4th cross in Jakkur Ward No.07 of Byatarayanapura Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014

Date of Testing : 10.07.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **25300**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	990	990	3.9	96.1	95-100
22.4	5145	6135	24.2	75.8	60-80
11.2	5670	11805	46.7	53.3	40-60
4.75	4055	15860	62.7	37.3	25-40
2.36	3960	19820	78.3	21.7	15-30
0.600	2590	22410	88.6	11.4	8-22
0.075	2605	25015	98.9	1.1	

Note:

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Bangalore-560079.

Assistant Executive Engineer
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.
Bangalore.

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Job No.: CTCE/BBMP/W.No.07/KRIDL/WMM/AIV/2014-15

10.07.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager,** KRIDL, Bangalore.
Name of the Work	Improvements of Roads and Drains in UAS 1st cross to 4th cross in Jakkur Ward No.07 of Byatarayanapura Kodigehalli Sub Division, BBMP, Bangalore.
Reference	AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	10.07.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Trial No. 3	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	382	383	384	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	82	83.5	83	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	300	299.5	301	
4	Aggregate Impact value = percent fines	21.47	21.80	21.61	
	100* (W_2/W_1)%				21.63

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.07/KRIDL/WMM/S-T/2014-15 10.07.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager,** KRIDL, Bangalore.
Name of Work	Improvements of Roads and Drains in UAS 1st cross to 4th cross in Jakkur Ward No.07 of Byatarayanapura Kodigehalli Sub Division, BBMP, Bangalore.
Reference	AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	10.07.2014

Result : Flakiness Index = **12.59%**

Elongation Index = **13.26%**

Result : Combined Flakiness & Elongation index 25.85%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.07/KRIDL/WMM/AL/2014-15

10.07.2014

ATTERBERG LIMITS TEST FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Improvements of Roads and Drains in UAS 1st cross to 4th cross in Jakkur Ward No.07 of Byatarayanapura Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014

Date of Testing : 10.07.2014

Material : WMM

Sample Location : WMM Mix Plant

As per MORTH Table 400-11

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit, %	22.60	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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10.07.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Improvements of Roads and Drains in UAS 1st cross to 4th cross in Jakkur Ward No.07 of Byatarayanapura Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014

Date of Testing : 10.07.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **26135**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	915	915	3.5	96.5	95-100
22.4	5960	6875	26.3	73.7	60-80
11.2	5535	12410	47.5	52.5	40-60
4.75	4875	17285	66.1	33.9	25-40
2.36	3585	20870	79.9	20.1	15-30
0.600	2480	23350	89.3	10.7	8-22
0.075	2365	25715	98.4	1.6	0-8

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10.07.2014

GRADATION FOR WMM
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Reference : AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014

Date of Testing : 10.07.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **25735**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	920	920	3.6	96.4	95-100
22.4	5965	6885	26.8	73.2	60-80
11.2	5530	12415	48.2	51.8	40-60
4.75	4885	17300	67.2	32.8	25-40
2.36	3370	20670	80.3	19.7	15-30
0.600	2485	23155	90.0	10.0	8-22
0.075	2360	25515	99.1	0.9	0-8

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10.07.2014

GRADATION FOR WMM
MORTH TABLE-400-11

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Reference : AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014

Date of Testing : 10.07.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **25435**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	990	990	3.9	96.1	95-100
22.4	5835	6825	26.8	73.2	60-80
11.2	5560	12385	48.7	51.3	40-60
4.75	4375	16760	65.9	34.1	25-40
2.36	3430	20190	79.4	20.6	15-30
0.600	2485	22675	89.1	10.9	8-22
0.075	2340	25015	98.3	1.7	0-8

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GRADATION FOR WMM
MORTH TABLE-400-11

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Reference : AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014

Date of Testing : 10.07.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **25935**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	995	995	3.8	96.2	95-100
22.4	5960	6955	26.8	73.2	60-80
11.2	5675	12630	48.7	51.3	40-60
4.75	4380	17010	65.6	34.4	25-40
2.36	3475	20485	79.0	21.0	15-30
0.600	2420	22905	88.3	11.7	8-22
0.075	2310	25215	97.2	2.8	0-8

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GRADATION FOR WMM
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Reference : AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014

Date of Testing : 10.07.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **26035**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	1020	1020	3.9	96.1	95-100
22.4	5985	7005	26.9	73.1	60-80
11.2	5530	12535	48.1	51.9	40-60
4.75	4495	17030	65.4	34.6	25-40
2.36	3430	20460	78.6	21.4	15-30
0.600	2435	22895	87.9	12.1	8-22
0.075	2320	25215	96.9	3.1	0-8

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GRADATION FOR WMM
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Reference : AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014

Date of Testing : 10.07.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **27665**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	745	745	2.7	97.3	95-100
22.4	6250	6995	25.3	74.7	60-80
11.2	4870	11865	42.9	57.1	40-60
4.75	4985	16850	60.9	39.1	25-40
2.36	3320	20170	72.9	27.1	15-30
0.600	4235	24405	88.2	11.8	8-22
0.075	2340	26745	96.7	3.3	0-8

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GRADATION FOR WMM
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Reference : AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014

Date of Testing : 10.07.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **28480**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	750	750	2.6	97.4	95-100
22.4	6235	6985	24.5	75.5	60-80
11.2	4855	11840	41.6	58.4	40-60
4.75	5565	17405	61.1	38.9	25-40
2.36	3360	20765	72.9	27.1	15-30
0.600	4245	25010	87.8	12.2	8-22
0.075	2350	27360	96.1	3.9	0-8

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GRADATION FOR WMM
MORTH TABLE-400-11

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Agency : **Technical Manager,** KRIDL, Bangalore.

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Reference : AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014

Date of Testing : 10.07.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **28805**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	780	780	2.7	97.3	95-100
22.4	6235	7015	24.4	75.6	60-80
11.2	4890	11905	41.3	58.7	40-60
4.75	5745	17650	61.3	38.7	25-40
2.36	3340	20990	72.9	27.1	15-30
0.600	4265	25255	87.7	12.3	8-22
0.075	2330	27585	95.8	4.2	0-8

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10.07.2014

GRADATION FOR WMM
MORTH TABLE-400-11

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Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Improvements of Roads and Drains in UAS 1st cross to 4th cross in Jakkur Ward No.07 of Byatarayanapura Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014

Date of Testing : 10.07.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **27760**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	750	750	2.7	97.3	95-100
22.4	6150	6900	24.9	75.1	60-80
11.2	4860	11760	42.4	57.6	40-60
4.75	5245	17005	61.3	38.7	25-40
2.36	3280	20285	73.1	26.9	15-30
0.600	4225	24510	88.3	11.7	8-22
0.075	2330	26840	96.7	3.3	0-8

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Job No.: CTCE/BBMP/W.No.07/KRIDL/WMM/Gradation/2014-15

10.07.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Improvements of Roads and Drains in UAS 1st cross to 4th cross in Jakkur Ward No.07 of Byatarayanapura Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014

Date of Testing : 10.07.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **26970**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	985	985	3.7	96.3	95-100
22.4	5985	6970	25.8	74.2	60-80
11.2	5560	12530	46.5	53.5	40-60
4.75	5385	17915	66.4	33.6	25-40
2.36	3350	21265	78.8	21.2	15-30
0.600	2545	23810	88.3	11.7	8-22
0.075	2380	26190	97.1	2.9	0-8

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10.07.2014

GRADATION FOR WMM
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Agency : **Technical Manager,** KRIDL, Bangalore.

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Reference : AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014

Date of Testing : 10.07.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **26250**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	1025	1025	3.9	96.1	95-100
22.4	6240	7265	27.7	72.3	60-80
11.2	5465	12730	48.5	51.5	40-60
4.75	4275	17005	64.8	35.2	25-40
2.36	3750	20755	79.1	20.9	15-30
0.600	2135	22890	87.2	12.8	8-22
0.075	2340	25230	96.1	3.9	0-8

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GRADATION FOR WMM
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Reference : AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014

Date of Testing : 10.07.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **27835**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	740	740	2.7	97.3	95-100
22.4	6235	6975	25.1	74.9	60-80
11.2	4870	11845	42.6	57.4	40-60
4.75	5265	17110	61.5	38.5	25-40
2.36	3310	20420	73.4	26.6	15-30
0.600	3950	24370	87.6	12.4	8-22
0.075	2345	26715	96.0	4.0	0-8

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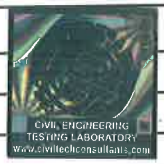
Job No.: CTCE/BBMP/W.No.07/KRIDL/WMM/AIV/2014-15

11.07.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager,** KRIDL, Bangalore.
Name of the Work	Improvements of Roads and Drains in UAS 1st cross to 4th cross in Jakkur Ward No.07 of Byatarayanapura Kodigehalli Sub Division, BBMP, Bangalore.
Reference	AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	11.07.2014



Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	389	387	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	82	85	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	307	302	
4	Aggregate Impact value = percent fines	21.08	21.96	
	100* (W_2/W_1)%			**21.52**

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Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.07/KRIDL/WMM/AIV/2014-15 11.07.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager,** KRIDL, Bangalore.
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Reference	AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	11.07.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	391	388	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	87	89	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	304	299	
4	Aggregate Impact value = percent fines	22.25	22.94	
	100* (W_2/W_1)%			22.59

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Aggregate Impact Value

IS: 2386 Part IV

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Agency	**Technical Manager,** KRIDL, Bangalore.
Name of the Work	Improvements of Roads and Drains in UAS 1st cross to 4th cross in Jakkur Ward No.07 of Byatarayanapura Kodigehalli Sub Division, BBMP, Bangalore.
Reference	AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	11.07.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	386	389	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	84	87	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	302	302	
4	Aggregate Impact value = percent fines	21.76	22.37	
	100* (W_2/W_1)%			**22.06**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Reference	AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	11.07.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	385	387	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	84	83	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	301	304	
4	Aggregate Impact value = percent fines	21.82	21.45	
	100* (W_2/W_1)%			21.63

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Reference	AEE/(KOD.SUB.DIV)/29/2014-15 Dated: 07.07.2014
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	11.07.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	388	389	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	86	87	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	302	302	
4	Aggregate Impact value = percent fines	22.16	22.37	
	100* (W_2/W_1)%			**22.26**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	11.07.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	379	382	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	83	85	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	296	297	
4	Aggregate Impact value = percent fines	21.90	22.25	
	100* (W_2/W_1)%			22.08

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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